November 15, 2017 I Ratings

Hybrid Annuity Model – The journey so far…

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Introduction:

National Highways Authority of India(NHAI) launched the Hybrid Annuity Model (HAM) based Built-Operate-Transfer (BOT) road projects in January 2016. During the period from January 2016 to March 2017, nearly 48 projects were awarded with effective length of around 12,000 lane km and bid project cost (BPC) of around Rs.49,000 crore. CARE Ratings through its earlier coveragetitled: "Hybrid AnnuityProjects - Risk mitigation for stakeholders?''in June 2016hadbrought out comparison of HAM projects with conventional design, build, finance, operate and transfer (DBFOT) based road projects;credit perspective on HAM; initial bidding pattern and its probable impact on the special purpose vehicle (SPV) cash flow.Recently, NHAI has also modified the model concession agreement (CA) of HAM to address SPV's challenges during construction phase and aid liquidity of sponsors during initial period of implementation. In a follow-on coverage, we bring out the current status of HAM projects awarded by NHAI while focusing on bidding strategy and its impact on SPV's cash flow and status of financial closure.

Below placedTable no. 1 highlights the recent changes introduced in the CA, and CARE's view on the impact.

Table No.1: Comparison of changes introduced in the model CA:

Particulars	Clause in earlier CA of HAM	Clause under revised CA of HAM	CARE's view
Mobilization advances	Mobilization advances can be availed from authority up to 10% of BPC @ bank rate of RBI compounded annually during construction period. Such advances can be ***availed at any time after expiry of 60 days from the appointed date.***	***Out of 10% mobilization advances 5% shall be available at any time after appointed date and balance 5% within sixty days from appointed date.***	Receipt of 50% of mobilization advances immediately upon receipt of appointed date and early release of first three installments of construction grant is expected to improve the cash flow of SPV during initial period of construction while reducing upfront funding requirements for sponsor.
Release of grant	Construction grant is to be released in the form of five equal installments subject to the achievement of ***physical progress of 20%, 40%, 60%, 75% and 90% respectively***.	Construction grant is to be released in the form of five equal installments subject to the achievement of ***physical progress of 10%, 30%, 50%, 75% and 90% respectively.***	

In contrast to the initial apprehension exhibited by the lenders towards financing HAM based road projects, there has been a notable improvement intheir interest largely attributable to introduction of various inbuilt features of risk mitigation and increase in NHAI's focus for awarding HAM projects.

Detailed analysis of HAMprojects awarded by NHAI in various parameters is placed below:

1) ***Projects awarded and awarding pattern:*** NHAI has awarded 48 HAM projects with aggregate length of around 12,000 lane km and BPC of around Rs.49, 000 crore till March 2017. NHAI has resorted to splitting large projects intonumerousconnecting stretches and has awarded multiple projects for enhancing the execution pace. Few notable examples are tabulated in Table No. 2 below:

***Table No.*2:Major project corridors so far:**

Main stretch	State	Number of projects	Aggregate length (lane km)	BPC (Rs. crore)
Bhavnagar to Veraval	Gujarat	6	1,029	3,915
Delhi to Meerut	Delhi / Uttar Pradesh	4	336	3,888
Mahagaon to Butibori	Maharashtra	3	817	3,269

2) ***Sponsor wise distribution of HAM projects:*** CARE Ratings hasclassifiedthe sponsors into three categories based on the underlyingcredit profile, financial flexibility and execution track record viz. Strong, Moderate and Weak sponsor.Tabulation based on the above approach is presented below as **Table No.3.**

Category of sponsor	Number of projects awarded	Effective length (lane km)	Aggregate BPC (Rs. crore)
Strong	31	8,365	35,955
Moderate	13	2,466	8,988
Weak	4	1,226	4,466

3) ***Analysis of bidding strategy of HAM projects awarded and its impact on SPV's cash flow:***

- With heightened impetus on rigid pavement-based road construction,averageBPC is found to be relatively higher than conventional bitumen/flexible payment-based road construction. Average BPC for the 44 HAM projects wasfound to be around Rs.4 crore per lane km as against average construction cost of Rs. 3 crore per lane km from traditional projects. Besides,construction of existing two lane carriage ways from granular sub base (GSB) level in some of the projects and provision of service roads in some of the stretches are also reasons for relatively higher BPC.

- Average operations and maintenance (O&M) annuity for the 36 HAM projects selected in sample for analysisis Rs. 3.35 lakh per lane km. While rigid pavement structure increases BPC, it reduces O&M cost considerably due to lower wear and tear. Maintenance cost in rigid pavement structure consists of replacement of plain cement concrete (PCC) panel on regular basis. Based on the estimates derived from industry sources, 0.5-1% of PCC panels are required to be replaced every year in rigid pavement structure apart from routine operating cost. Adequacy of O&M biding can also be analyzed from length of project, provision of toll plaza and difference between first (L1), second (L2) and third (L3) bidder.

- CARE Ratings have divided awarded HAM projects in four categories based on the bidding strategy and analyzed them as tabulated below:

Table No.4: Bidding scenarios and analysis of the scenarios

Sr. No.	Biding scenarios	CARE's View
1	i. BPC > NHAI cost; ii. Adequate bidding for O&M annuity	Adequate cash flow cushion
2	i. BPC> 1.10 times of NHAI cost; ii. Lower bidding for O&M annuity	Adequate cash flow cushion
3	i. BPC< NHAI cost; ii. Adequate bidding for O&M annuity	Moderate cash flow cushion in operational period albeit with execution challenges
4	i. BPC> NHAI cost and <1.10 times of NHAI cost; ii. Lower bidding for O&M annuity	Limited cash flow cushion due to increased O&M and execution risk

Scenario 1 indicates adequate bidding for BPC and O&M cost which is expected to provide adequate cash flow cushion in the medium term.

Scenario 2 indicates higher BPC and lower O&M cost while bidding. One of the prominent reasons for lower O&M cost is front loading of BPC which has also been reflected from wide variations in BPC and O&M cost reported amid first (L1) and second(L2) bidder. Projects with lower bidding cost for O&M annuity have been structured in such a way that the total project cost for financial closure (FC) remains 10-15% lower than BPC. As inflation indexed annuity payments are linked to BPC, hence higher construction and interest annuities along with low debt levels attributed to lower total project cost provide cash flow cushion against lower O&M annuity payout to an extent.Hence, projects bided under this strategy are also expected to result in adequate cash flow cushion.

CARE ratings estimates that around 75% of aggregate BPC for the projects awarded till March 2017 fall under scenario 1 and scenario 2.

Scenario 3 indicates adequate bidding for O&M cost albeit with lower BPC. CARE ratings estimates that around 4% of aggregate BPC for the projects awarded till March 2017 fall under this scenario.These projects are expected to offer moderate cash flow cushion with some challenges in execution of projects within estimated cost.

Scenario 4 indicates lower bidding of O&M cost with limited flexibility to reduce total project cost for financial closure as BPC<1.10 times of NHAI cost. CARE ratings estimates that around 21% of aggregate BPC for the projects awarded till March 2017 fall under this scenario. Nevertheless, strong sponsors with demonstrated execution capability and synergic benefits due to ongoing work at connecting/nearby stretches by same sponsor resulting in cost optimization can also result in execution of project at lower construction cost than NHAI cost. Moreover, fixed price EPC contract with such strong sponsor can transfer construction risk to sponsor and in turn make such projects economically viable while reducing total project cost for financial closure as compared to BPC and NHAI cost.CARE Ratings also draw comfort from post-tax cash inflow of around 6% of original cash inflow (without escalation) due to price multiple index (PMI) for inflation on BPC during operational period. This could also provide cash flow cushion especially under **scenario 3** and **scenario 4**.

- As envisaged by CARE Ratings vide its earlier report published in June 2016, sponsors with demonstrated execution capability and cost competency have beenfront-runners inwinning projects. Competitive intensity has witnessed moderation in few projects awarded in YTDFY18 due to reduced bidding appetite of the developers due to award of sizeable projects in FY17. Further, Indian road sector is dominated by limited players for executing large sized HAM projects despite fragmentation. This could also restrict bidding flexibility for the sponsors whileparallely increasingbanks' exposure towards specific players.

4) ***Status of financial closure (FC) and appointed date:*** Financial closure (FC) witnessed momentum since November 2016. As evaluated by CARE Ratings, projects with aggregate BPC of around Rs. 43,500 crore have already achieved FC till November 10, 2017. Increasing acceptanceamongst lenders for HAM and timely release of construction grant along with escalation by NHAI has increased confidence for the lenders. In order to alleviate lender's interest various favorable clauses in the form of (i) upfront equity commitment of 50%, (ii) fixed price EPC contract and O&M contract with strong sponsor cum contractor, (iii) shortfall undertakings from sponsors, (iv) restriction on first disbursement till achievement of stipulated milestones, (iv) creation of liquidity support mechanism as well as major maintenance reserve etc. have also been incorporated. However, projects with aggregate BPC of ~Rs. 5,500 crore are yet to achieve financial closure, out of which projects with aggregate BPC of ~Rs. 4,500 crore belong to weak sponsors.

Table No. 4 Depicts particulars of timely/delay in achievement of financial closure for the projects awarded till March 2017:

Particulars	Timely FC	Major Delay in achievement of FC
Type of sponsor	**BPC(Rs. crore)**	**BPC(Rs. crore)**
Strong	30,900	4,600
Moderate	5,750	2,223
Total	**36,650**	**6,823**

Complexity in execution of the project, aggressive bidding particularly in O&M cost and moderate credit profile of sponsor are the major reasons for delay in achievement of FC apart from initial reluctance of lenders. Nearly 80% amongst the projects which faced major delay in achieving FC, delay in receiving appointed date is also due to delay in receipt of requisite Right of Way (RoW) which has also been a prominent reason. Besides, as on November 10, 2017, projects with aggregate BPC of around Rs. 7,400 crore are yet to receive appointed date despite achieving financial closure.

Conclusion:

CARE Ratings expects above mentioned issues to be resolved by NHAI in near to medium term, thereby resulting in likelytraction in execution pace for the HAM projects awarded till FY17.Timely release of Inflation indexed-construction grant is also expected to boost confidence of both developers and lenders. Release of 50% of mobilization advances upon receipt of appointed date and relaxation in milestone for releasing construction grant is expected to improve cash flow cushion in the construction phase. Awarding multiple projects along the same project corridor as compared to single large sized project is also expected to reduce execution challenges for those projects.However, implementation challenges shall persist for large sized projects undertaken by moderate to weak sponsor and structurally complex project in hilly and dense forest region.

CARE Ratings expects that 10-15% lower total project cost than BPC could provide cash flow cushion during operational period to an extent owing to low debt levels vis-à-vis annuity receipts especially in the event of low bidding for O&M annuity.Nevertheless, developer’s ability to complete those projects within budgeted cost is crucial especially when total project cost is significantly lower than BPC as well as NHAI cost.